

Abstract

Ordering data writes includes at least some of a group of primary storage devices receiving a first plurality of data writes, causing a cycle switch for the group of primary storage devices where the first plurality of data writes are associated with a particular cycle on each primary storage device in the group, and at least some of the group of primary storage devices receiving a second plurality of writes after initiating the cycle switch where all of the second plurality of writes are associated with a cycle different from the particular cycle on each primary storage device. Writes to the group begun after initiating the cycle switch may not complete until after the cycle switch has completed.

Ordering data writes may also include, after completion of the cycle switch, each of the primary storage devices of the group initiating transfer of the first plurality of writes to a corresponding secondary storage device. Ordering data writes may also include, following each of the primary storage devices of the group completing transfer of the first plurality of writes to a corresponding secondary storage device, each of the primary storage devices sending a message to the corresponding secondary storage device.